CLAIMS

What is claimed is:

1.   A system that tests industrial control modules, comprising:

an instrument that provides input stimulus and measurement readings;

a test component that provides program flow to the input stimulus and measurement readings of the at least one instrument; and

an instrument component that is communicatively coupled to the instrument and has a virtual mode that runs the test component with the instrument in simulation mode.

2.   The system of claim 1, further comprising at least two instruments, at least two test components, and/or at least two instrument components.

3.   The system of claim 1, the instrument component has a normal mode for running the instrument in live mode.

4.   The system of claim 1, further comprising a test kernel component that provides a generic interface to the instrument component and the test component.

5.   The system of claim 4, further comprising a test system interface that allows test selectability and test initiation to a remote source.

6.   The system of claim 5, the test system interface is a graphical user interface.

7.   The system of claim 1, at least one of the instrument component and the test component is a dynamically linked library.

8.   The system of claim 7, the instrument component comprises at least one basic functional module associated with a particular type of the instrument.

9.   The method of claim 8, the at least one basic functional module comprises at least one of a reset component, a self-test component, a setup component, and a read component.

10.   A method for testing industrial control modules, comprising:

developing at least one test template file with a plurality of test level type functions;

compiling and linking the at least one test template file to at least one instrument component; and

executing the at least one test template file in simulation mode to determine if the at least one test template file operates properly.

11.   The method of claim 10, developing at least one test template file comprises providing a plurality of test level type functions, function calls, and standard instrument library calls, which are commented out.

12.   The method of claim 11, further comprising uncommenting the test level type functions, function calls, and standard instrument library calls for a specific unit to be tested.

13.   The method of claim 12, further comprising inserting code into the at least one of the test level type functions to provide functionality to the at least one of the test level type functions.

14.   The method of claim 10, further comprising executing the at least one test template file in normal mode to test the industrial control module.

15.   The method of claim 10, at least one of the at least one test template file and the instrument component is a dynamically linked library.

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16. The method of claim 15, further comprising decomposing the instrument component into at least one basic functional module associated with a particular type of at least one instrument that is to be tested.

17. The method of claim 16, the at least one basic functional module is at least one of a reset, self-test, setup, and read module.

18. The method of claim 15, further comprising removing and/or replacing obsolete instruments by editing the dynamically linked library.

19. The method of claim 10, further comprising developing the at least one test template file at a remote location.

20. A system that facilitates test development for testing of industrial control modules, comprising:

means for developing at least one test template file;

means for executing the at least one test template file in simulation mode to determine if the at least one test template file operates properly; and

means for executing the at least one test template file in normal mode to test the industrial control module.

21. The system of claim 20, further comprising means for developing the at least one test template file at a remote location.